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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,787	11/17/2003	Hideaki Shoji	450100-04814	2440

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EXAMINER

LE, NHAN T

ART UNIT PAPER NUMBER

2618

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/714,787	Applicant(s) SHOJI, HIDEAKI	
	Examiner Nhan T. Le	Art Unit 2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (US 6,959,210) in view of Sugimoto et al (US 2003/0092420).

As to claim 1, Nakamura teaches a portable wireless communication apparatus comprising: an antenna composed of a first ground conductor (see fig. 5, number 1, col. 6, lines 41-67, col. 7, lines 1-8); a second ground conductor (see fig. 5, number 2, col. 6, lines 41-67, col. 7, lines 1-8); connection means (see fig. 5, number 17, col. 6, lines 41-67, col. 7, lines 1-8) configured so that signal lines for electrically connecting prescribed circuits respectively on the first ground conductor and the second ground conductor and a feeder (see fig. 5, number 13, col. 6, lines 41-67, col. 7, lines 1-8) having one end connected to a part of the connection means and the other end connected to a feed point mounted to either one of the first ground conductor and the second ground conductor to effect feeding thereto. Nakamura fails to teach a conductor line for supplying a high frequency signal to either one of the first ground conductor and the second ground conductor are integrated with each other through an insulator to electrically connect the first ground conductor and the second ground conductor together. Sugimoto teaches a conductor line for supplying a high frequency signal is

Art Unit: 2685

integrated with each other through an insulator to electrically connect the adjacent segments (see fig. 12a, number 3, paragraphs 0072-0073). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Sugimoto into the system of Nakamura in order to attain the highest antenna performance.

As to claim 2, the combination of Nakamura and Sugimoto teaches wherein the connection means is a flexible printed circuit board (see Nakamura col. 7, lines 45-67, col. 8, lines 1-16).

As to claims 3, 4, 5, the combination of Nakamura and Sugimoto teaches wherein the conductor line is in a form of a plated layer (see Sugimoto fig. 12a, number 3, paragraphs 0072-0073); wherein the conductor line is layered at least on a surface of the flexible printed circuit board (see Nakamura col. 7, lines 45-67, col. 8, lines 1-16; Sugimoto fig. 12a, number 3, paragraphs 0072-0073) in a thickness direction thereof; wherein the conductor line is provided at least along an edge (see Nakamura col. 7, lines 45-67, col. 8, lines 1-16; Sugimoto fig. 12a, number 3, paragraphs 0072-0073) of the flexible printed circuit board in a longitudinal direction thereof.

As to claim 6, the combination of Nakamura and Sugimoto teaches wherein the opposite connection ends of the flexible printed circuit board (see Nakamura fig. 5, number 17, col. 6, lines 41-67, col. 7, lines 1-8, lines 45-67, col. 8, lines 1-16) are respectively connected to the vicinity of one edge of the first ground conductor and of the confronting one edge of the second ground conductor.

As to claim 7, the combination of Nakamura and Sugimoto teaches a first casing (see Nakamura fig. 5, number 1, col. 6, lines 41-67, col. 7, lines 1-8); and a second casing (see Nakamura fig. 5, number 2, col. 6, lines 41-67, col. 7, lines 1-8) connected to the first casing through a hinge part in a freely foldable manner; wherein the first casing incorporates the first ground conductor; the second casing incorporates the second ground conductor; and the hinge part (see Nakamura fig. 5, number 17, col. 6, lines 41-67, col. 7, lines 1-8) incorporates at least a part of the connection means.

As to claim 8, Nakamura teaches a portable wireless communication apparatus comprising: an antenna composed of a first ground conductor (see fig. 5, number 1, col. 6, lines 41-67, col. 7, lines 1-8); a second ground conductor (see fig. 5, number 1, col. 6, lines 41-67, col. 7, lines 1-8); connection means (see fig. 5, number 17, col. 6, lines 41-67, col. 7, lines 1-8) configured so that signal lines for electrically connecting circuits respectively on the first ground conductor and the second ground conductor; and a feeder (see fig. 5, number 13, col. 6, lines 41-67, col. 7, lines 1-8) having one end connected to a part of either one of the first ground conductor and the second ground conductor and the other end connected to a feed point mounted to the other ground conductor to effect feeding thereto. Nakamura fails to teach a conductor line for supplying a high frequency signal to either one of the first ground conductor and the second ground conductor are integrated with each other through an insulator to electrically connect the first ground conductor and the second ground conductor together. Sugimoto teaches a conductor line for supplying a high frequency signal is integrated with each other through an insulator to electrically connect the adjacent

Art Unit: 2685

segments (see fig. 12a, number 3, paragraphs 0072-0073). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Sugimoto into the system of Nakamura in order to attain the highest antenna performance.

As to claims 9, 10, 11, 12, the combination of Nakamura and Sugimoto teaches wherein the connection means is a flexible printed circuit board (see Nakamura col. 7, lines 45-67, col. 8, lines 1-16); wherein the conductor line is in a form of a plated layer (see Sugimoto fig. 12a, number 3, paragraphs 0072-0073); wherein the conductor line is layered at least on a surface of the flexible printed circuit board in a thickness direction thereof (see Nakamura col. 7, lines 45-67, col. 8, lines 1-16; Sugimoto fig. 12a, number 3, paragraphs 0072-0073); wherein the conductor line is provided at least along an edge of the flexible printed circuit board in a longitudinal direction thereof (see Nakamura col. 7, lines 45-67, col. 8, lines 1-16; Sugimoto fig. 12a, number 3, paragraphs 0072-0073).

As to claim 13, the combination of Nakamura and Sugimoto teaches wherein the opposite connection ends of the flexible printed circuit board (see Nakamura col. 7, lines 45-67, col. 8, lines 1-16; Sugimoto fig. 12a, number 3, paragraphs 0072-0073) are respectively connected to the vicinity of one edge of the first ground conductor and of the confronting one edge of the second ground conductor.

As to claim 14, the combination of Nakamura and Sugimoto teaches wherein one end of the flexible printed circuit board is connected to the vicinity of one edge of the ground conductor (see Nakamura fig. 8, col. 8, lines 17-40) having the feed point from

Art Unit: 2685

out of one edge of the first ground conductor and the confronting one edge of the second ground conductor, with the other end of the flexible printed circuit board (see Nakamura fig. 8, col. 8, lines 17-40) being connected to the vicinity of the other edge at the side opposite to the one edge of the ground conductor to which feeding is effected.

As to claim 15, the combination of Nakamura and Sugimoto teaches wherein one end of the flexible printed circuit board is connected to the vicinity of one edge of the ground conductor (see Nakamura fig. 8, col. 8, lines 17-40) having the feed point from out of one edge of the first ground conductor and the confronting one edge of the second ground conductor, with the other end of the flexible printed circuit board (see Nakamura fig. 8, col. 8, lines 17-40) being connected to an intermediate part between the one edge of the ground conductor to which feeding is effected and the other edge at the side opposite to the one edge.

As to claim 16, the combination of Nakamura and Sugimoto teaches wherein an additional flexible printed circuit board (see Nakamura fig. 8, col. 8, lines 17-40) electrically connected to the flexible printed circuit board is provided to extend from the intermediate part to the other edge.

As to claim 17, the combination of Nakamura and Sugimoto teaches a first casing (see Nakamura fig. 5, number 1, col. 6, lines 41-67, col. 7, lines 1-8); and a second casing (see Nakamura fig. 5, number 1, col. 6, lines 41-67, col. 7, lines 1-8) connected to the first casing through a hinge part in a freely foldable manner, wherein: the first casing incorporates the first ground conductor; the second casing incorporates the second ground conductor; and the hinge part incorporates at least a part of the

Art Unit: 2685

connection means (see Nakamura fig. 5, number 17, col. 6, lines 41-67, col. 7, lines 1-8).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tanizaki et al (US 2001/0052876) teaches directional coupler, antenna device and transmitting-receiving device.

Yokoyama et al (US 4,641,366) teaches portable radio communication apparatus comprising an antenna member for a broadband signal.

Ono (US 2003/0087610) teaches a foldable cellular phone set.

Jiang et al (US 2003/0184485) teaches horizontally polarized slot antenna with omni directional and sectorial radiation patterns.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Le whose telephone number is 571-272-7892. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2685

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N. Le

Nhan Le

Nguyen Vo

3-15-2006

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PRIMARY EXAMINER**